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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,152	07/24/2003	Young Il Park	CU-3309 RJS	9707

26530 7590 03/27/2007  
LADAS & PARRY LLP  
224 SOUTH MICHIGAN AVENUE  
SUITE 1600  
CHICAGO, IL 60604

EXAMINER
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BRIGGS, NATHANAEL R

ART UNIT	PAPER NUMBER
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2871

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/27/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/626,152	<b>Applicant(s)</b> PARK ET AL.	
	<b>Examiner</b> Nathanael R. Briggs	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                   |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                              | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/8/2007</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto et al. (US 6,791,640) in view of Arakawa (US 2002/0060762).

1. Regarding claims 1, 4-8, and 10, Okamoto discloses a reflective LCD (see figures 1 and 26) having: a lower substrate (5) including a reflective electrode (7) and a lower orientation film (3) formed on the reflective electrode (7) with an orientation direction having a range of  $0^{\circ}$ ~ $10^{\circ}$  with respect to an imaginary line for reference; an upper substrate (4); an upper orientation film (2) formed on the upper substrate (4), having an orientation angle of  $-50^{\circ}$ ~ $54^{\circ}$  with respect to the orientation direction of the lower substrate (14,15); a twisted nematic liquid crystal layer (1, column 6, line 25) interposed between the lower substrate (5) and the upper substrate (4), with a predetermined phase delay value ( $d\Delta n$ ) of  $0.15$ ~ $0.17 \mu\text{m}$  (column 6, lines 41-45), having

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twist angle of  $50^{\circ}$ ~ $60^{\circ}$  with respect to the left direction (column 6, lines 45-47); and a polarizing plate (10) attached to a outer surface of the upper substrate (4) not opposed to the lower substrate (5), having a predetermined polarizing axis with an angle of  $112^{\circ}$ ~ $120^{\circ}$  with respect to the orientation direction of the lower substrate (TWIST ANGLE, 03; column 7, lines 46-49). However, Okamoto does not expressly disclose wherein the upper substrate is capable of compensating a phase of  $\lambda/4$  with an optical axis of a predetermined angle.

2. Regarding claims 1, 4-8, and 10, Arakawa discloses an LCD (see figure 3, for instance) having an upper substrate (22b) capable of compensating a phase of  $\lambda/4$  with an optical axis of a predetermined angle ([0009]; [0014]; [0018]).

3. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the quarter wave substrate of Arakawa in the LCD of Okamoto. The motivation for doing so would have been to make a lightweight, thin LCD, while improving shock resistance, as taught by Arakawa ([0014]). Claims 1, 4-8, and 10 are therefore unpatentable.

4. Regarding claims 2 and 11, Okamoto in view of Arakawa discloses the reflective LCD of claims 1 and 10 (see Okamoto figures 1 and 26; Arakawa figure 3, for instance), and Okamoto further discloses wherein the transparent substrate capable of compensating the phase of  $\lambda/4$  (8) is a glass substrate for completely circular-polarizing light of 550 nm wavelength (100; column 6, lines 27-41; column 15, lines 1-14). Claims 2 and 11 are therefore unpatentable.

5. Regarding claim 3, Okamoto in view of Arakawa discloses the reflective LCD of claim 1 (see Okamoto figures 1 and 26; Arakawa figure 3, for instance), and Okamoto further discloses wherein the transparent substrate capable of compensating the phase of  $\lambda/4$  (100) is a glass substrate for changing a phase of light of 550 nm wavelength  $\lambda/2$  (column 15, lines 4-9). Claim 3 is therefore unpatentable.

6. Regarding claim 12, Okamoto in view of Arakawa discloses the reflective LCD of claim 10 (see Okamoto figures 1 and 26; Arakawa figure 3, for instance), and Okamoto further discloses wherein the transparent substrate capable of compensating the phase of  $\lambda/4$  (100) is a glass substrate for changing a phase of light of 550 nm wavelength into  $\lambda/4$  (column 15, lines 9-14). Claim 12 is therefore unpatentable.

7. Regarding claims 9 and 13, Okamoto in view of Arakawa discloses the reflective LCD of claims 1 and 10 (see Okamoto figures 1 and 26; Arakawa figure 3, for instance), and Okamoto further discloses wherein the reflective electrode (7) has a flexural surface (column 7, lines 60-67; column 8, lines 1-11). Claims 9 and 13 are therefore unpatentable.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathanael R. Briggs whose telephone number is (571) 272-8992. The examiner can normally be reached on 9 AM - 5:30 PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Nathanael Briggs  
3/19/2007

*Andrew Briggs*  
ANDREW BRIGGS  
PATENT ATTORNEY